East Yellow Creek
Recreational Use Attainability Analysis

July 2005

Prepared for:
UAA Review Committee
Water Quality Monitoring & Assessment Section
Water Protection Program
MISSOURI DEPARTMENT OF NATURAL RESOURCES
1101 Jefferson
Jefferson City, MO 65102-0176

Prepared by:
MEC WATER RESOURCES, INC.
1000 North College Avenue, Suite 4
Columbia, Missouri 65201

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I. PROJECT BACKGROUND

East Yellow Creek was evaluated for existing and attainable Whole Body Contact Recreation (WBCR) uses in June 2005. Using assessment methods prescribed by Missouri Department of Natural Resources (MDNR) guidance, MEC Water Resources, Inc. (MEC) staff concludes that Whole Body Contact Recreation (WBCR) is neither an existing or attainable use within surveyed reaches.

At the request of the City of Marceline, MEC assessed classified reaches of East Yellow Creek near the Marceline WWTF (MO 0039721) for existing, potential, and attainable WBCR uses. The assessment described herein is expected to meet or exceed the requirements set forth by the MDNR for conducting a Recreational Use Attainability Analysis (UAA) (MDNR 2004).

II. STUDY AREA

East Yellow Creek (Figure 1) is a Class P water of the state and a tributary to Yellow Creek near Marceline, Missouri (Blunt 2004). Uses currently designated for East Yellow Creek include: Protection of Warm-Water Aquatic Life and Human Health – Fish Consumption, and Livestock and Wildlife Watering. Draining a 174 $mi.^2$ watershed in Linn and Chariton County, East Yellow Creek is dominated by cool season grassland (73%), row-crop agriculture (16%), and upland deciduous forest (10%) according to 1993 Thematic Mapper imagery. The East Yellow Creek watershed is contained within the Lower Grand River Basin (8 digit HUC 10280103) and State assigned water body identification number is 0597.

III. METHODS AND MATERIALS

Procedures developed by MDNR for conducting Recreational UAAs (MDNR 2004) were the primary reference for this study. In summary, MDNR UAA procedures contain the minimum elements listed below:

- Survey should generally be conducted during the regulatory recreational season (April 1 to October 31);
- Surveys should be conducted during baseflow conditions;
- Recreational assessments should be performed at a minimum of three publicly accessible sites along the stream reach of interest;
- All sites shall be marked on a 1:24,000 USGS topographic map
- A photographic record of each site that includes upstream and downstream views, in addition to any evidence of observed or potential recreational uses; and
- Interviews of persons present during the time of survey and nearby-residents.

In addition to MDNR minimum requirements, MEC staff collected the following data within an assessment reach having a total length of approximately twenty times bankfull width:

- Stream hydrogeometry (width, depth, velocity, bank slope);
- Riffle, pool, run (stream mesotype) composition; and
- Riparian corridor characteristics

Hydrogeometry measurements were obtained along three equally spaced cross-sections within each mesotype unless one mesotype dominated the entire upstream or downstream reach, e.g. one large bridge scour pool. Five equally spaced cross-sections were taken for situations where a single mesotype dominated the assessment reach. Streamflow measurements were obtained using a Price AA 'Pygmy' velocity meter and calibrated wading rod.

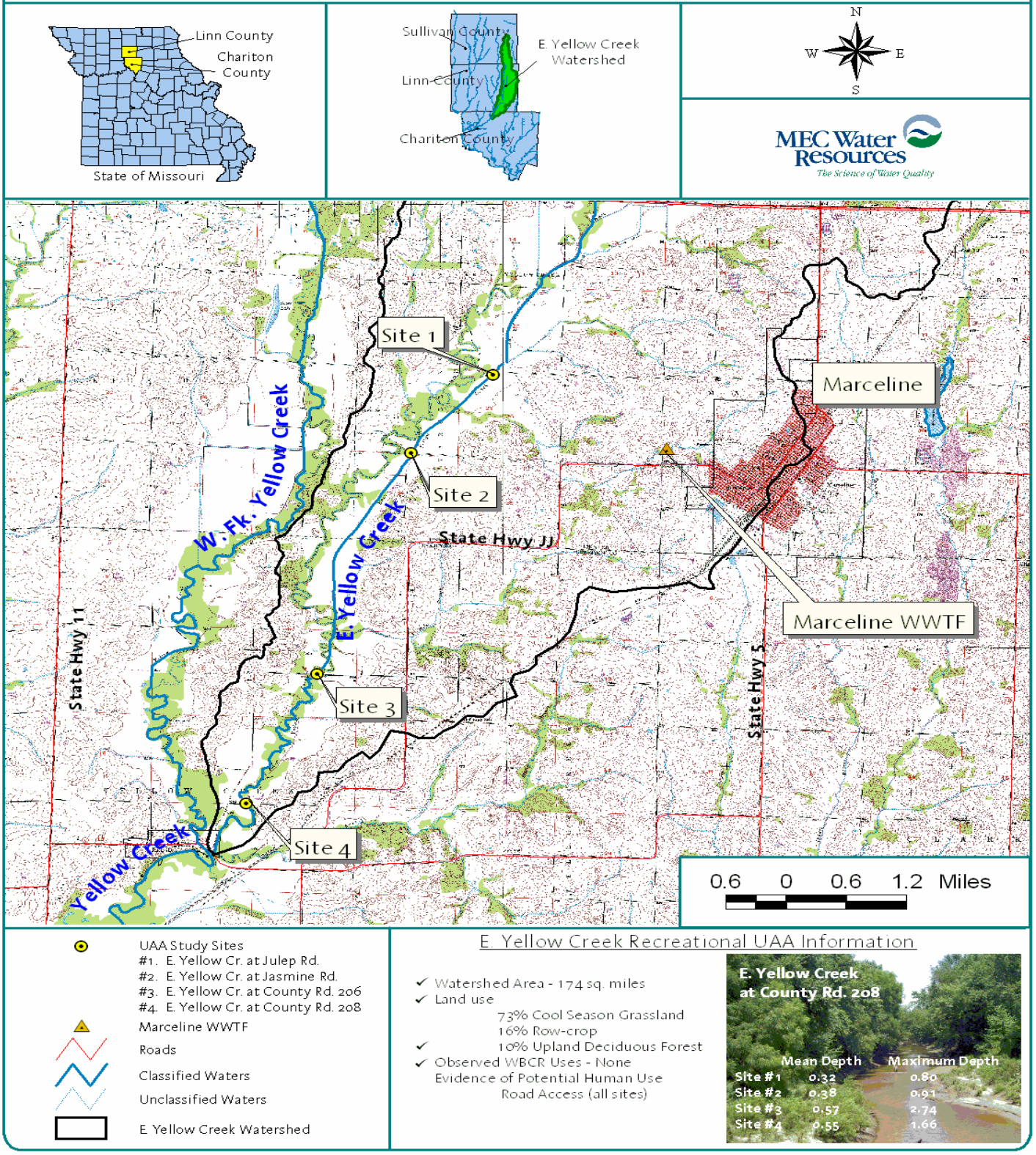
IV. RESULTS & DISCUSSION

The following discussion is provided to aid decision-makers in evaluating appropriate existing or potential recreational uses for East Yellow Creek. Although summarized in the following paragraphs, the field data sheets required by MDNR UAA protocols are included in Appendix A. Additional data collected during the survey are included in Appendix B.

Streamflow and Weather Conditions

Four sites (Figure 2) within classified sections of East Yellow Creek were assessed on June 28, 2005 using methods described in Section IV; 0597_Site 1_Julep Road bridge, 0597_Site 2_Jasmine Road bridge, 0597_Site 3_Road 206 bridge, and 0597_Site 4_Road 208 bridge. Surveys were conducted during baseflow conditions as evidenced by precipitation data from Brookfield, Missouri, streamflow from USGS gage station 06905500, and from streamflow measurements taken in East Yellow Creek the day of the survey (Tables 1-3).

Figure 1. E. Yellow Creek Study Area and Sites



Weather conditions during the time of the study were stable with the last measured rainfall occurring two weeks prior to the evaluation (Table 1). Air temperatures reached approximately 90°F and skies were cloudy. Weather conditions are not believed to have precluded or limited recreational opportunities during the survey.

Table 1. Two-Week Antecedent Rainfall from Brookfield, MO. (Source: Midwest Climate Data Center)

Date (mm/dd/yy)	Precipitation (inches)
6/15/05	0.00
6/16/05	0.00
6/17/05	0.00
6/18/05	0.00
6/19/05	0.00
6/20/05	0.00
6/21/05	0.00
6/22/05	0.00
6/23/05	0.00
6/24/05	0.00
6/25/05	0.00
6/26/05	0.00
6/27/05	0.00
6/28/05	0.00

Table 2. Streamflow Conditions from Grand River USGS Gage Station 06905500

Date (mm/dd/yy)	Streamflow (cfs)
06/15/05	2501
06/16/05	1558
06/17/05	1156
06/18/05	1248
06/19/05	1208
06/20/05	1118
06/21/05	1067
06/22/05	1035
06/23/05	1008
06/24/05	984
06/25/05	959
06/26/05	941
06/27/05	739
06/28/05	542

Table 2. Observed Streamflow Conditions During East Yellow Creek Recreational UAA Survey

Date (mm/dd(yy)	Site (name)	Streamflow (cfs)
06/28/05	Julep	8.18
06/28/05	Jasmine	8.55
06/28/05	Road 206	11.21
06/28/05	Road 208	8.95

Site Characterization

Sites surveyed as part of this study represent the only publicly accessible areas along classified segments of East Yellow Creek. Study results are discussed for each site to provide a description of differences between assessment reaches.

Site 1. Julep Road Bridge Crossing (39.73273, -93.00165) Upstream of WWTF

The landscape near the Julep Road bridge crossing is mostly row crop with some lightly forested areas. The banks are steeply sloping and are mostly covered with sand and some grass and small shrubs (Figure 2). Riparian areas not wide and are composed of trees and shrubs. Channel substrate is predominately sand with minimal gravel present.

Figure 2. East Yellow Creek Site 1 Downstream View

Figure 3. East Yellow Creek Site 1 Upstream View

Mean depth along a 1200 ft. assessment reach was 0.32 ft as determined from 10 transects (Appendix B). The maximum depth observed at this location was .8 feet. MEC staff measured streamflow as 8.18 cfs at the bridge.

MEC staff did not observe any direct or indirect evidence of WBCR at Site 1. MEC staff did observe trash in the form of old tires and boxes that were likely dumped from the bridge (Figure 3). Additionally, spent shotgun shells and broken clay targets were observed on the stream bank.

MEC staff believe that WBCR is neither an existing or an attainable use at this site based on limited access to the stream imposed by steep slopes, absence of observed WBCR uses, and low flow shallow conditions.

Site 2. Jasmine Road Bridge Crossing (39.71887, -93.01673) 3.61 Miles from WWTF

The stream banks near the road are steeply sloping and are covered with low-growing brush and rocks (Figure 4). Riparian areas are vegetated by the upland deciduous forest complex and row crop agriculture. The stream channel was observed to be mostly sand with some cobble and gravel (Figure 5).

Mean depth along a 900 ft. assessment reach was 0.38 ft. as determined from 11 transects (Appendix B). The maximum depth observed at this location was .91 ft. in a small pool downstream of the road access. Flow was measured as 8.55 cfs.

There were no direct human uses observed at this site. No individuals were seen or found to be available for interviews near the bridge crossing at the time of the survey. A fishing line hanging from the bridge was the only evidence of human use.

MEC staff concludes that WBCR is neither an existing or an attainable use at this site based on absence of observed recreational uses, low flow shallow conditions and difficult stream access imposed by steeply sloping banks.

Figure 4. East Yellow Creek Site 2 Right Bank

Figure 5. East Yellow Creek Site 2 Downstream View

Site 3. Road 206 Bridge Crossing (39.68226, -93.03448) 6.43 Miles from WWTF
The riparian area is generally wider at Site 3 than that at Sites 1 or 2 and consists of larger trees, thick brush, and some grassy areas (Figure 6). The stream banks at Site 3 are somewhat steep and covered with rocks, brush, and downed trees (Figure 7). Stream substrate consisted of mostly sand with some mud and clay.

Mean depth along a 700 ft. assessment reach was 0.57 feet as determined from 11 transects (Appendix B). The maximum depth observed at this location was 2.74 feet in a pool downstream of the road access. Measured streamflow was 11.21 cfs.

Figure 6. East Yellow Creek Site 3 Downstream View

Figure 7. East Yellow Creek Site 3 Right Bank

MEC staff did not observe any WBCR uses at Site 3. All terrain vehicle tracks were observed on the stream bank near the upstream section of the assessment reach. In addition to the steep bank slopes, "No Trespassing" signs were posted on land adjacent to the stream and near the access point.

MEC staff concludes that WBCR is neither an existing nor an attainable use at this site based on the low flow shallow conditions and the lack of observed WBCR uses.

Site 4. Road 208 Bridge Crossing (39.66021, -93.04710) 8.88 Miles from WWTF
The stream banks near the crossing at Road 208 are steeply sloping and lightly vegetated (Figure 8). Riparian areas are vegetated by upland deciduous forest and row crop agriculture. The stream channel was observed to be mostly sand with some cobble and gravel. A large pool was present downstream from the bridge and was likely due to the logjam that stretched across the stream beneath the bridge (Figures 9 and 10).

Figure 8. East Yellow Creek Site 4 Right Bank

Figure 9. East Yellow Creek Site 4 Downstream View

Figure 10. East Yellow Creek Site 4 Logjam Under Bridge

Mean depth along a 960 ft. assessment reach was 0.55 ft. as determined from 11 transects (Appendix B). The maximum depth observed at this location was 1.66 feet. Measured streamflow was 11.21 cfs.

There were no direct human uses observed at this site. Additionally, there was no evidence of human use present at Site 4. No individuals were seen or found to be available for interviews near the bridge crossing at the time of the survey.

MEC staff concludes that WBCR is neither an existing nor an attainable use at this site based on the low flow shallow conditions, steep slopes, and the lack of observed WBCR uses.

V. WHOLE BODY CONTACT USE ATTAINABILITY RECOMMENDATION

MEC Staff concludes that the surveyed reaches of East Yellow Creek do not currently support WBCR uses due to the absence of observed WBCR uses or evidence of WBCR uses and the presence of steep bank slopes. Furthermore, WBCR uses in East Yellow Creek are not attainable according to depth criteria associated with ephemeral, intermittent, or low flow conditions set forth in MDNR UAA guidance.

VI. REFERENCES

Blunt, M. 2004. Code of State Regulations; Missouri Water Quality Standards, Title 10, Division 20, Chapter 7.

Missouri Department of Natural Resources. 2004. Recreational Use Attainability Analysis Protocol. Water Protection Program, Jefferson City, MO.

Appendix A

MDNR Field Data Sheets

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

Water Body Name: East Yellow Creek (from USGS 7.5' quad)
8-digit HUC: 10280103
Missouri WBID # 0597
County: Linn, Chariton
Upstream Legal Description: NW ¼ of NW ¼ of Section 30, Township 57N, Range 18W
Downstream Legal Description: SW ¼ of SE ¼ of Section 17, Township 56N, Range 19W
Upstream Coordinates: 39.71978 latitude, -92.96975 longitude (USG 84, ddd,dddd)
Downstream Coordinates: 39.66021 latitude, -93.04710 longitude (USG 84, ddd,dddd)
Discharger Facility Name(s): Marceline WWTF
Discharger Permit Number(s): MO0039721
Number of Sites Evaluated: 4
Name of Surveyor and Telephone Number: David Carani/573-443-4100
Organization: MEC Water Resources
Position: Water Quality Specialist

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: _____ **Date:** 6/28/05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 0597	Site Location Description:
Site GPS Coordinates: 39.73273/-93.00165	Site 1 Julep Road Bridge Crossing
Date & Time: 6/28/05 7:00	Facility Name: Marceline WWTF
Personnel: DC DW	Permit Number: MO 0039721
Current Weather Conditions: Cloudy 80°F	Weather Conditions for Past 7 days: Hot, dry
Photo Ids: Upstream: 4 / Downstream: 5	Other: 1, 2, 3(trash), 6(left bank), 7 (rt. bank)

Uses Observed*:

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☐ None of the above	☒ Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)
Shotgun shells + broken clay pigeons (pics 1+2)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ Other:	

Evidence of Human Use*:

☒ Roads Bridge Cross	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Rope swings	☐ Camping Sites	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle
☒ Other: trash				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two – Data Sheet B for WBID # 0597 : Site 1

Stream Morphology:

Upstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	8.18

Downstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	SEE ABOVE

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
5	95				

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☐ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☒ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: _____ **Date:** 6/28/05

Organization: MEC Water Resources, Inc. Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 0597		Site Location Description: Site 2 Jasmine Road Bridge Crossing	
Site GPS Coordinates: 39.71887/-93.01673			
Date & Time: 6/28/05 845		Facility Name: Marceline WWTF	
Personnel: DC DW		Permit Number: MO 0039721	
Current Weather Conditions: cloudy 85°		Weather Conditions for Past 7 days: Hot	
Photo Ids: Upstream: 8	Downstream: 9	Other: 10, 11	

Uses Observed*:

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ Other:	

Evidence of Human Use*:

☒ Roads Bridge Crossing	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Rope swings	☐ Camping Sites	☐ Fire pit/ring	☐ NPDES Discharge	☒ Fishing Tackle
☐ Other:				Limb Line

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

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Page Two – Data Sheet B for WBID # 0597 : Site 2

Stream Morphology:

Upstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	8.55

Downstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	SEE Above

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
5	5	90			

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☒ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach additional comments (including information from interviews) to this form.

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Signed: _____ **Date:** 6/28/05

Organization: MEC Water Resources, Inc. Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 0597		Site Location Description: Site 3 Road 206 Bridge Crossing	
Site GPS Coordinates: 39.68226/-93.03448			
Date & Time: 6/28/05 1300		Facility Name: Marceline WWTF	
Personnel: DC DW		Permit Number: MO 0039721	
Current Weather Conditions: cloudy 90°		Weather Conditions for Past 7 days: Hot, dry	
Photo Ids: Upstream: 19	Downstream: 18	Other: 17 20	

Uses Observed*:

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☒ No trespass sign	☐ Fence	☒ Steep slopes	☐ Other:	

Evidence of Human Use*:

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☒ RV / ATV Tracks
☐ Rope swings	☐ Camping Sites	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle
☐ Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

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Page Two – Data Sheet B for WBID # 0597 : Site 3

Stream Morphology:

Upstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec): 11.21	

Downstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec): SEE ABOVE	

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	95 % Sand	% Silt	5 % Mud/Clay	% Bedrock

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☒ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach additional comments (including information from interviews) to this form.

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Signed: _____ **Date:** 6/28/05

Organization: MEC Water Resources, Inc. Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 0597		Site Location Description: Site 4 Road 208 Bridge Crossing
Site GPS Coordinates: 39.6602/-93.04710		
Date & Time: 6/28/05 1115		Facility Name:
Personnel: DC DW		Permit Number:
Current Weather Conditions: 85°		Weather Conditions for Past 7 days: Hot + Dry
Photo Ids: Upstream: 12	Downstream: 13	Other: 14 15-Banks 16 - Log jam

Uses Observed*:

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ Other:	

Evidence of Human Use*:

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Rope swings	☐ Camping Sites	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle
☒ Other: No Evidence of human use				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

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Page Two – Data Sheet B for WBID # 0597 : Site 4

Stream Morphology:

Upstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	8.95

Downstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☒ Flow	Present? ☒ Yes ☐ No		Estimated (ft^3/sec):	SEE Above

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
	5	95			

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☒ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

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Signed: _____ **Date:** 6/28/05

Organization: MEC Water Resources, Inc. Position: Field Technician

Appendix B

Stream Morphology Information

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0597_Site 1_East Yellow Creek at Julep Road

Length of Assessment Reach (ft.)		1200		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Run	600	0.22	0.41
2	Run		0.22	0.51
3	Run		0.18	0.56
4	Run		0.33	0.49
5	Run		0.41	0.52
6	Run	600	0.27	0.41
7	Run		0.33	0.56
8	Run		0.54	0.8
9	Run		0.36	0.58
10	Run		0.32	0.5

Maximum Observed Depth (ft.)	0.80
Mean Assessment Reach Depth (ft.)	0.32

0597_Site 2_East Yellow Creek at Jasmine Road

Length of Assessment Reach (ft.)		900		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Riffle	58	0.32	0.82
2	Riffle		0.34	0.89
3	Riffle		0.37	0.7
4	Run	392	0.32	0.71
5	Run		0.32	0.6
6	Run		0.48	0.91
7	Pool	450	1.14	1.97
8	Pool		0.65	1.15
9	Pool		0.78	1.62
10	Pool		0.82	1.5
11	Pool		0.68	1.14

Maximum Observed Depth (ft.)	0.91
Mean Assessment Reach Depth (ft.)	0.38

0597_Site 3_East Yellow Creek at Road 206

Length of Assessment Reach (ft.)		700		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Pool	225	1.51	2.74
2	Pool		0.97	1.84
3	Pool		1.21	2.11
4	Run	125	0.48	0.88
5	Run		0.25	0.59
6	Run		0.24	0.82
7	Run	350	0.30	0.62
8	Run		0.29	0.56
9	Run		0.37	0.85
10	Run		0.31	0.66
11	Run		0.30	0.67

Maximum Observed Depth (ft.)	2.74
Mean Assessment Reach Depth (ft.)	0.57

0597_Site 4_East Yellow Creek at Road 208

Length of Assessment Reach (ft.)		960		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Pool	268	0.69	1.3
2	Pool		0.91	1.45
3	Pool		0.76	1.51
4	Run	212	0.48	1.66
5	Run		0.44	0.68
6	Run		0.51	0.84
7	Run	480	0.48	0.72
8	Run		0.29	0.63
9	Run		0.54	0.73
10	Run		0.44	0.89
11	Run		0.49	0.85

Maximum Observed Depth (ft.)	1.66
Mean Assessment Reach Depth (ft.)	0.55